Aymane Hamdaoui

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Education

Master MVA at ENS Paris-Saclay *September 2025 – April 2026*

- Master's student at ENS Paris-Saclay (MVA), a leading program in mathematics and machine learning.
- Majors: Applied mathematics, modeling, learning.
- Relevant courses: optimal transport, reinforcement learning, geometric and topological data analysis (3D shape classification, parametrization, topological inference in high dimension), computational statistics (MCMC, Bayesian inference and Bayesian computing methods).

Engineering school — Télécom Paris *September 2023 – July 2025*

- Student at Télécom Paris, one of France's leading computer science schools. **GPA: 4.0/4.0**
- Majors: Computer Vision, Signal Processing for Artificial Intelligence.
- Relevant courses: statistics, time series, optimization for machine learning, generative models, medical imaging, language processing, machine learning (SVM, Random Forest, LDA, QDA, KNN...) and deep learning (neural networks, RNN, CNN, LSTM, Transformers, generative models, GAN, VAE, diffusion models ...), Markov chains, language processing (HMM, word embeddings).

Preparatory classes *September 2021 – July 2023*

- Studied mathematics and physics through different topics as linear algebra, calculus, probability and statistics, quantum physics, thermodynamics, and numerical methods. Graduated with **GPA: 4.0/4.0**.

Notable Projects

Semantic StyleGAN *Repository*

- Worked on the latent space of the pretrained StyleGAN2 model to assign semantic meaning to its dimensions and wrote a report paper.
- Tested methods proposed by papers as GANspace or InterfaceGAN.
- Tried to automate the choice of the step introduced by InterfaceGAN.
- Relevant tools: GANs, PyTorch, NumPy, CUDA.

Segmentation of cardiac MRI images *Repository*

- Developed a method to automate recognition of the left ventricles in cardiac MRI.
- Method using low-level tools in image processing and computer vision, such as Hough transforms or morphological operators.
- Relevant tools: OpenCV, NumPy and TorchIO.

Cardiac Pathology Detection Repository

- Implemented a method to predict pathologies from MRIs.
- Ranked 2nd out of more than 70 students in this challenge.
- Relevant Tools: Classical machine learning (classification problem), scikit-learn, pandas, SimpleITK.

Experience

Summer Internship *Paris, France*
Stockly *July 2024 – Sept 2024*

- Automated the extraction of crucial information from incoming emails as part of a project.
- Relevant tools: Apps Script, Regex, NumPy, Zendesk API

Private Teacher *Paris, France*
Self-employed *Since Sept 2023*

- Providing courses to high school and undergraduate students.
- Subjects: mathematics, physics, chemistry, and computer science.

Languages

- French: Native.
- English: C1 (Linguaskill 180/180).
- Arabic: Fluent in the North African dialect and level B1-B2 in classical Arabic.

Associative Involvement

Volunteer at a charity that organizes food collections and distributions to help people in need.